

# SAFETY DATA SHEET



## 1. COMPANY AND PRODUCT IDENTIFICATION

|                               |   |
|-------------------------------|---|
| <b>Product Name</b>           | GamS protein  |
| <b>Product Number</b>         | 501024, 501096  |
| <b>Recommended use</b>        | For research use only   |
| <b>Uses advised against</b>   | No information available  |
| <b>Supplier Address</b>       | Arbor Biosciences<br>5840 Interface Drive, Suite 101<br>Ann Arbor, MI 48103<br>USA                |
| <b>Email</b>                  | info@arborbiosci.com  |
| <b>Phone</b>                  | + 1 (734) 998-0751  |
| <b>Emergency Phone Number</b> | +1 (800) 222-1222 (American Association of Poison Control Centers)<br>Available 24 hours everyday |

## 2. HAZARD(S) IDENTIFICATION

### Emergency Overview

Minor hazard for usual industrial or commercial handling. Handle in accordance with good industrial hygiene and safety practice.

|                       |           |
|-----------------------|-----------|
| <b>Appearance</b>     | Colorless |
| <b>Physical State</b> | Liquid    |
| <b>Odor</b>           | Odorless  |

|                      |            |
|----------------------|------------|
| <b>Target organs</b> | None known |
|----------------------|------------|

### Principle Routes of Exposure

#### Acute Toxicity

|                   |   |
|-------------------|---|
| <i>Inhalation</i> | Minor hazard for usual industrial or commercial handling.   |
| <i>Eyes</i>       | Redness. May cause slight irritation.   |
| <i>Skin</i>       | Prolonged contact may cause redness and irritation. Repeated exposure may cause skin dryness or cracking. |
| <i>Ingestion</i>  | Minor hazard for usual industrial or commercial handling.   |

#### Chronic Effects

|                         |                          |
|-------------------------|--------------------------|
| <i>Chronic Toxicity</i> | No information available |
|-------------------------|--------------------------|

*Symptoms* No information available

*Aggravated Medical Conditions* Not known

**Environmental Hazard**

See Section 12: ECOLOGICAL INFORMATION

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Arbor Biosciences GamS protein is solved in 10 mM Tris/HCl pH 7.5.

| Component | CAS-No  | %  |
|-----------|---------|----|
| Tris base | 77-86-1 | ~1 |

**4. FIRST-AID MEASURES**

**General Advice**

Immediate medical attention is required. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Remove from exposure, lie down. Do not breathe dust/fume/gas/mist/vapors/spray.

**Eye Contact**

Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

**Skin Contact**

Wash skin with soap and water.

**Inhalation**

Remove to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately if symptoms occur.

**Ingestion**

Clean mouth with water and drink afterwards plenty of water.

**Note to Physician**

Treat symptomatically.

**5. FIRE-FIGHTING MEASURES**

**Suitable Extinguishing Media**

Substance is non-flammable. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media**

CAUTION: Use of water spray when fighting fire may be inefficient.

**Specific Hazards Arising from the Chemical**

Thermal decomposition can lead to release of irritating gases and vapors.

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA      **Health Hazards** 0      **Flammability** 0      **Stability** 0      **Special Hazard** N/A

## 6. ACCIDENTAL RELEASE MEASURES

### Personal Precautions

Ensure adequate ventilation, especially in confined areas. Avoid contact with skin, eyes and clothing.

### Personal Protective Equipment [PPE]

Use personal protection recommended in Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

### Environmental Precautions

Should not be released into the environment.

### Methods for Containment

Prevent further leakage or spillage if safe to do so.

### Methods for Cleaning Up

Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. This material and its container must be disposed of as hazardous waste.

## 7. HANDLING AND STORAGE

### Advice on Safe Handling

Handle in accordance with good industrial hygiene and safety practice.

### Storage Temperature

Refer to Product Data Sheet provided with the product and also available at [www.arborbiosci.com](http://www.arborbiosci.com) for specific information.

### Storage Conditions

Keep/store only in original container. Keep tightly closed in a dry and cool place.

### Incompatible Materials

None known based on information supplied.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Engineering Measures

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

### Exposure Guidelines

This product does not contain any hazardous materials.

### Personal protective equipment (PPE)

Refer to OSHA`s regulations in 29 CFR 1910.133 or European Standard EN166 for eye/face protection and 29 CFR 1910.134 or European standard EN149 for respiratory protection.

#### *Eye/face Protection*

Wear safety glasses with side shields (or goggles).

#### *Skin and Body Protection*

Wear suitable protective clothing and gloves.

#### *Respiratory Protection*

Use in well ventilated areas.

#### *General Hygiene Considerations*

Handle in accordance with good industrial hygiene and safety practice.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

Physical State    Liquid  
 Appearance      Colorless  
 Odor                Odorless

### Property

pH  
 Melting Point/Freezing Point  
 Boiling Point/Boiling Range  
 Flash Point  
 Evaporation Rate  
 Flammability (solid, gas)  
 Flammability Limit in Air  
     Upper Flammability Limit  
     Lower Flammability Limit  
 Vapor Pressure  
 Vapor Density  
 Relative Density  
 Specific Gravity  
 Water solubility  
 Solubility in Other Solvents  
 Partition Coefficient  
 Autoignition Temperature  
 Decomposition Temperature  
 Kinematic Viscosity  
 Dynamic Viscosity  
 Explosive Properties  
 Oxidizing Properties

### Notes/Method

~7.5 at 20 °C (68 °F)  
 No information available  
 100 °C (212 °F)  
 Not applicable  
 No information available  
 Not applicable  
 Not applicable  
 Not applicable  
 Not applicable  
 No information available  
 No information available  
 No information available  
 No information available  
 No information available  
 No information available  
 No information available  
 No information available  
 No information available  
 No information available  
 Product is not self-igniting  
 No information available  
 No information available  
 No information available  
 No information available  
 Not explosive  
 Not oxidizing

### Other Information

Softening Point                    No information available  
 Molecular Weight                Not applicable  
 VOC Content (%)                 Not applicable  
 Density                              Not applicable  
 Bulk Density                        No information available

## 10. STABILITY AND REACTIVITY

### Reactivity

No data available.

### Stability

Stable under Normal Conditions.

### Possibility of Hazardous Reactions

Non under normal processing.

#### Conditions to Avoid

Incompatible materials. Ignition sources. Heat. Exposure to air or moisture over prolonged periods.

#### Incompatible Materials

Strong Oxidizing Agents.

#### Hazardous Decomposition Products

None known

## 11. TOXICOLOGICAL INFORMATION

### Acute Toxicity

#### Product Information

Product does not present an acute toxicity hazard based on known or supplied information.

#### *Inhalation*

Avoid breathing vapors or mists. May cause irritation of respiratory tract.

#### *Eye Contact*

Redness. May cause slight irritation.

#### *Skin Contact*

Prolonged contact may cause redness and irritation. Repeated exposure may cause skin dryness or cracking.

#### *Ingestion*

May cause drowsiness or dizziness. Ingestion causes burns of the upper digestive and respiratory tracts. Symptoms include burning sensation, coughing, wheezing, shortness of breath, headache, nausea, and vomiting.

### Chronic Toxicity

|  |  |
|--|--|
| <i>Skin Corrosion/Irritation</i>         | Mild   |
| <i>Serious Eye Damage/Eye Irritation</i> | Mild   |
| <i>Irritation</i>                        | Mild   |
| <i>Corrosivity</i>                       | Mild   |
| <i>Sensitization</i>                     |  |
| Skin                                     | No information available                                       |
| Respiratory                              | No information available                                       |
| <i>Germ Cell Mutagenicity</i>            | No information available                                       |
| <i>Carcinogenicity</i>                   | No information available                                       |
| <i>Reproductive Toxicity</i>             | No information available                                       |
| <i>Developmental Toxicity</i>            | No information available                                       |
| <i>Teratogenicity</i>                    | No information available                                       |
| <i>STOT - Single Exposure</i>            | No information available                                       |
| <i>STOT - Repeated Exposure</i>          | No information available                                       |
| <i>Chronic Toxicity</i>                  | No information available                                       |
| <i>Subchronic Toxicity</i>               | No information available                                       |
| <i>Target Organ Effects</i>              | Kidneys, Respiratory system, Eyes, Skin.                       |
| <i>Neurological Effects</i>              | No information available                                       |
| <i>Other Adverse Effects</i>             | The toxicological properties have not been fully investigated. |
| <i>Aspiration Hazard</i>                 | No information available                                       |

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity (aquatic and terrestrial)

Do not empty into drains.

### Persistence and Degradability

No information available

### Bioaccumulative Potential

No information available

### Mobility in Soil

No information available

### Other Adverse Effects

*Ozone depletion potential (ODP)*

No information available

## 13. DISPOSAL CONSIDERATIONS

### Relevant Information

Keep out of drains, sewers, ditches and waterways.

### Disposal Considerations

Use a licensed professional waste disposal service to dispose of this product.

Product may be dissolved in a combustible solvent or absorbed onto a combustible material and burned by a chemical incinerator.

### Contaminated Packaging

Empty containers must be tripled rinsed prior to disposal.

## 14. TRANSPORT INFORMATION

|                   |               |
|-------------------|---------------|
| <b>DOT</b>        | Not regulated |
| <b>TDG</b>        | Not regulated |
| <b>MEX</b>        | Not regulated |
| <b>ICAO (air)</b> | Not regulated |
| <b>IATA</b>       | Not regulated |
| <b>IMDG</b>       | Not regulated |
| <b>RID</b>        | Not regulated |
| <b>ADR</b>        | Not regulated |
| <b>AND</b>        | Not regulated |

## 15. REGULATORY INFORMATION

### International Inventories

|      |          |
|------|----------|
| TSCA | Complies |
| DSL  | Complies |
| NDSL | Complies |

### Legend

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**US Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

**SARA 311/312 Hazard Categories**

|                                   |    |
|-----------------------------------|----|
| <i>Acute health hazard</i>        | No |
| <i>Chronic Health Hazard</i>      | No |
| <i>Fire hazard</i>                | No |
| Sudden Release of Pressure Hazard | No |
| Reactive Hazard                   | No |

**CWA (Clean Water Act)**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

**International Regulations****Canada**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

**16. OTHER INFORMATION****Training advice**

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

|                      |  |
|----------------------|--|
| <b>Prepared by</b>   | Arbor Biosciences<br>+1 (734) 998-0751   |
| <b>Creation Date</b> | 3/01/2017  |
| <b>Revision Date</b> | 2/23/2018  |
| <b>Version</b>       | 01   |
| <b>Revision Note</b> | SDS is valid three (3) years from revision date. Contact info@arborbiosci.com for latest revision. |

**Disclaimer**

IMPORTANT: The information in this SDS is provided in good faith based on our knowledge as of the creation date (or subsequent revision date, if any), and is to be used only as a guide. This SDS does not constitute a guarantee (express or implied) of any kind and we make no warranties or merchantability or fitness for a particular purpose. This information relates only to the designated

product as shipped and may not be valid if the product is used in combination with any other materials or is not used in accordance with our instructions. It is the responsibility of the buyer/user to ensure that its activities comply with all applicable governmental requirements. Since conditions of use of the product are not under the control of Arbor Biosciences, it is the duty of the buyer/user to determine the necessary conditions for the safe use of the product. Arbor Biosciences will not be liable for any damages resulting from handling or contact with the product.

**End of Safety Data Sheet**